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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,913	09/28/2000	Jeff B. Jordan	7721.105	7786

7590 11/10/2003  
Lance A Foster  
P O Box 15928  
Baton Rouge, LA 70895

EXAMINER

DABNEY, PHYLESHA LARVINIA

ART UNIT	PAPER NUMBER
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2643

4

DATE MAILED: 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/670,913

Applicant(s)

JORDAN, JEFF B.

Examiner

Phylesha L Dabney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9 and 12-20 is/are rejected.
- 7) ☒ Claim(s) 3,4,10,11,21 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

This action is in response to the application filed on 28 September 2000 in which claims 1-22 are pending. Translated copies of references Hiramoto and Ono have been included.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2, 5-9, and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramoto (JP 8-102994), in view of Ono (JP 55-016546-A).

Regarding claims 1 and 6, Hiramoto teaches a loudspeaker (fig. 2-3) with a T-yoke (30-31; 40-41) comprising: a body having a base (30, 40) and a pole piece (31, 41) with a sealed cavity (A, 25, 32, 34; B, 25, 42-43) formed within the pole piece; and an inlet/outlet (32, 34; 42, 43) formed in the body. Hiramoto does not teach using a fluid, such as water, oil, etc., for cooling the loudspeaker. Ono teaches using water or oil, instead of air in a loudspeaker to radiate heat (cooling) away from the magnetic circuit for preventing the temperature of the voice coil from rising since the thermal conductivity of a fluid is higher than air. Therefore, it would have been obvious to one of ordinary skill in the art to use a fluid in the invention of Hiramoto as taught by Ono for removing heat from the magnetic circuit of the loudspeaker.

Regarding claims 2 and 9, Hiramoto in view of Ono teaches the base has an aperture (Hiramoto, at 33) formed therein which communicates with the cavity and a base plug (Hiramoto, 33, 35) sealingly engages the aperture.

Regarding claim 5, Hiramoto in view of Ono teach a central wall (Hiramoto, at 36) divides the cavity into two cells. Hiramoto in view of Ono does not teach a top passage within the cavity connects the two cells. However, the examiner takes official notice that it is known to make cutouts or depressions in the pole piece to facilitate heat dissipating fluid flow through the loudspeaker.

Regarding claim 7, in the alternate embodiment of Hiramoto (fig. 3), Hiramoto teaches including top passages (43) through the sidewalls thereby creating apertures as an alternate means of moving heat through the loudspeaker. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include apertures in the sidewalls (31, fig. 2) for circulating heat through the loudspeaker. In addition, Hiramoto teaches including plugs (fig. 2, 33, 35) over the apertures for restricting the flow of fluid through passages. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include plugs over the apertures for controlling the flow of fluid. Furthermore, Hiramoto in view of Ono does not teach the plugs positioned therein the apertures; however, the examiner takes official that it is known to bore holes or provide cut-ins into the center pole-piece for attaching shorting rings, etc., to prevent interference with the voice coil bobbin movement. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the plugs within the pole piece for the reasons stated above.

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Regarding claim 8, Hiramoto teaches a loudspeaker having a T-yoke with a pole piece (31, 41), a magnet (fig. 2, 20) surrounding the pole piece, a voice coil (13) positioned between the pole piece and the magnet (20), and a cone (11) connected to the voice coil, the T-yoke comprising: a body having a base (30, 40) and a pole piece (31, 41) with a sealed cavity (A, 25, 32, 34; B, 25, 42-43) formed within the pole piece; and an inlet/outlet (32, 34; 42, 43) formed in the body. Hiramoto does not teach using a fluid, such as water, oil, etc., for cooling the loudspeaker. Ono teaches using water or oil, instead of air in a loudspeaker to radiate heat (cooling) away from the magnetic circuit for preventing the temperature of the voice coil from rising since the thermal conductivity of a fluid is higher than air. Therefore, it would have been obvious to one of ordinary skill in the art to use a fluid in the invention of Hiramoto as taught by Ono for removing heat from the magnetic circuit of the loudspeaker.

Regarding claim 12, Hiramoto in view of Ono teaches the cone (Hiramoto, 11) is positioned in a speaker basket (Hiramoto, 15) with a field plate (Hiramoto, 23) positioned between the magnet and the speaker basket; a damper (Hiramoto, at 16) is connected at an outer perimeter to the basket and at an inner perimeter to the voice coil. Hiramoto in view of Ono does not teach at least one electrical lead passing into the basket and connecting to the voice coil; however, the examiner takes official notice that it is known in the art to have an electric lead pass into the basket and connect to the voice coil for supplying alternating current to the magnetic system and cause the puss-pull of the diaphragm. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to pass an electric lead into the basket of Hiramoto in view of Ono and connect to the voice coil for the reasons stated above.

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Regarding claim 13, Hiramoto in view of Ono also teaches placing a coolant fluid reservoir (Ono, at 19) at the fluid inlet and the fluid outlet for radiating heat away from the magnetic circuit.

Regarding claim 14, Hiramoto in view of Ono teaches a pump (Ono, 25) circulates coolant fluid between the T-yoke and the fluid reservoir.

Regarding claim 15, see the rejection of claims 8 and 13.

Regarding claim 16, see the rejection of claim 14.

Regarding claim 17, Hiramoto in view of Ono teaches hose connectors (17, 18) extending from the inlet and outlet.

Regarding claim 18, Hiramoto in view of Ono teaches the system further includes a heat exchanger (Ono, 19).

Regarding claim 19, Hiramoto in view of Ono teaches the reservoir performs the function of a heat exchanger (Ono, 19).

Regarding claim 20, see the rejection of claim 1.

#### ***Allowable Subject Matter***

2. Claims 3-4, 10-11, and 21-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

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3. Applicant's arguments, see page 7 lines 1-10 specifically, filed 24 July 2003, with respect to the rejection(s) of claim(s) 1, 8, and 15 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Hiramoto in view of Ono is presented above.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phylesha L Dabney whose telephone number is 703-306-5415. The examiner can normally be reached on Mondays, Tuesdays, Wednesdays, Fridays 8:30-5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on 703-305-4708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**Or faxed to:**

(703) 872-9314, for formal communications intended for entry and for informal or draft communications, please label "Proposed" or "Draft" when submitting an informal amendment.

(703) 306-0377, for customer service questions.


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Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

PLD

  
October 19, 2003

  
CURTIS KUNZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600